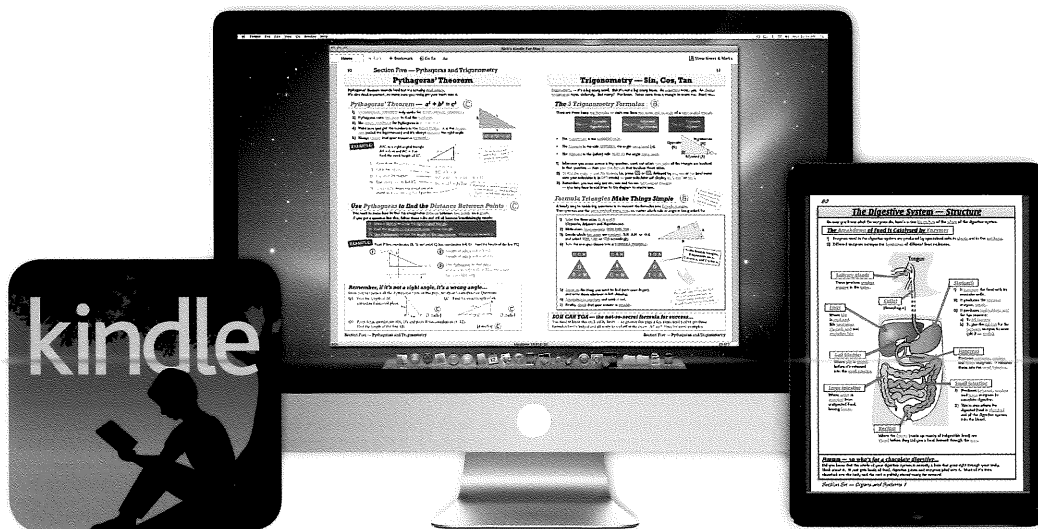


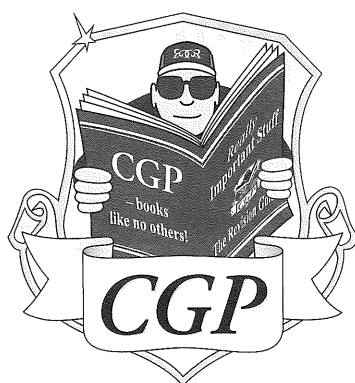
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Symbols and Units

At A-Level, you're expected to use **standard scientific notation**. This means using **conventional symbols** and **units**, and writing very large and very small numbers in **standard form**.

The table below lists the different quantities you'll come across in this book, with their standard symbols and units:

Quantity	Symbol	Unit
Displacement (distance)	s	metre, m
Time	t	second, s
Velocity (speed)	v	metre per second, ms^{-1}
Acceleration	a	metre per second squared, ms^{-2}
Mass	m	kilogram, kg
Force	F	newton, N
Gravitational field strength	g	newton per kilogram, Nkg^{-1}
Energy	E	joule, J
Work	W	joule, J
Power	P	watt, W
Frequency	f	hertz, Hz
Wavelength	λ	metre, m
Charge	Q	coulomb, C
Electric current	I	ampere, A
Potential difference	V	volt, V
Resistance	R	ohm, Ω

At A-Level, units like m/s are written ms^{-1} .

This is just **index notation**.

(If it doesn't make sense to you, look up 'rules of indices' in a maths book.)

Standard form lets us write **very big** or **very small** numbers in a more convenient way. It looks like this:

A must be between 1 and 10 $A \times 10^n$ n is the number of places the decimal point moves

For example:

53100 can be written as 5.31×10^4 , and 2.5×10^{-3} is the same as **0.0025**.

You might also see large or small numbers given in units with these prefixes:

Multiple	Prefix	Symbol
10^{12}	tera	T
10^9	giga	G
10^6	mega	M
10^3	kilo	k
10^{-2}	centi	c
10^{-3}	milli	m
10^{-6}	micro	μ
10^{-9}	nano	n
10^{-12}	pico	p
10^{-15}	femto	f

Make sure you give your answers to questions to a sensible number of **significant figures**.

An easy way to do this is by always rounding your answers to the **same number** of significant figures as the given data value you've used in the calculation with the **least** significant figures.

Then **write** the number of significant figures you've rounded your answer to:

e.g. $2 \div 3.5 = 0.571\dots = \mathbf{0.6}$ (to 1 s.f.)

(2 is to 1 s.f., 3.5 is to 2 s.f., so the answer needs to be given to 1 s.f.)